

13. An apparatus according to claim 1, wherein said field illuminator comprises:

a light source which produces light within a wavelength range broad enough to be useful for a plurality of tests on the biologic fluid sample; and

an assembly of objective optics, wherein said optics direct light emanating from said sample field or transmitted through said sample field into a known or ascertainable area image of light on said image dissector.

14. An apparatus according to claim 13, wherein said assembly of objective optics comprises:

an objective lens;

a focusing mechanism, said mechanism for selectively adjusting the position of said objective lens relative to the chamber; and

a light filter for blocking or passing certain wavelengths of said light;

wherein other wavelengths of said light emanating from said light source pass through said objective lens and said light filter and into said image dissector, or are blocked, respectively.

15. An apparatus according to claim 14, wherein said field illuminator directs light into said sample within the chamber and collects light fluorescing out of said sample.

16. An apparatus according to claim 15, wherein said light filter comprises:

a plurality of light source excitation filters;

a plurality of sample emission filters;

wherein said light source excitation filters block selected wavelengths of said light emanating from said light source and said sample emission filters block selected wavelengths of said light fluorescing out of said sample.

17. An apparatus according to claim 16, wherein said light source excitation filters are mounted on a first wheel and said sample emission filters are mounted on a second wheel and both said filters are rotatable into and out of a path of said light; and

5 wherein said field illuminator further comprises means for synchronizing said first wheel and said second wheel such that all desirable combinations of said light source excitation filters and said sample emission filters can be used during said tests.

18. An apparatus according to claim 16, wherein said field illuminator further comprises:
10 a light diverting prism; and
a reference detector having means for quantifying an energy level of said light emanating from said light source, wherein said quantified energy level is selectively used in evaluating said light fluorescing out of said sample.

15 19. An apparatus according to claim 14, wherein said field illuminator directs light into said chamber containing said sample and collects light produced by transmittance passing through said sample.

20. An apparatus according to claim 19, wherein said light filter comprises:
20 a plurality of light source excitation filters;
a plurality of sample emission filters;
wherein said light source excitation filters block wavelengths of said light emanating from said light source and said sample emission filters block wavelengths of said light emanating from said sample.

21. (Amended) An apparatus according to claim 20, wherein said light source excitation filters are mounted on a first wheel and said sample emission filters are mounted on a second wheel and both said wheels permit rotation of said filters into and out of a path of said light; and

wherein said field illuminator further comprises means for synchronizing said first wheel and said second wheel such that all desirable combinations of said light source excitation filters and said sample emission filters can be used during said tests.

22. An apparatus according to claim 21, wherein said field illuminator further comprises:
a light diverting prism; and

a reference detector having means for quantifying an energy level of said light emanating from said light source, wherein said quantified energy level is selectively used in evaluating said light emanating from said sample by fluorescence.

23. An apparatus according to claim 2, wherein said means for determining one of said through-plane thickness or said volume of said sample field includes said information retrieving means retrieving information from a label concerning the chamber which information includes one of said through-plane thickness of said sample field or said volume of said sample field.